AMENDMENTS TO THE CLAIMS

The following listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) An optical code reading system for imaging and decoding an optical code, said optical code reading system comprising:

an optical code reader comprising an image sensor for imaging said optical code and generating at least one data signal representative of at least one parameter of at least one wavelength component of said optical code impinging onto said image sensor, and at least one lens positioned for movement along an optical axis of said optical code reader, wherein each of said at least one data signal represents a particular color;

a signal processor comprising means for performing an analysis utilizing principles of axial chromatic aberration and at least one value indicative of the parameter of the at least one wavelength component, and means for determining an amount of movement of said at least one lens for adjusting a focus quality of an image corresponding to said optical code and impinged onto said image sensor, such that said amount of movement is determinative by data signals representing one or more colors;

an actuator operatively coupled to said at least one lens for moving said at least one lens along said optical axis of said optical code reader by at least the determined amount for adjusting the focus quality of said image; and

a decoder for decoding data encoded by said image.

2. (Currently Amended) The optical code reading system according to Claim 1, wherein said processor ~~determines~~ further comprises means for determining a distance to said optical target by accessing at least one data structure and correlating the at least one value indicative of the parameter of the at least one wavelength component to said distance.

3. (Original) The optical code reading system according to Claim 1, further comprising a feedback system, including the image sensor and the signal processor, for repeatedly generating the at least one data signal and performing said analysis, until said signal processor determines the data is decodeable by said decoder.

4. (Original) The optical code reading system according to Claim 3, further comprising a controller for controlling the actuation of said actuator.

5. (Original) The optical code reading system according to Claim 1, further comprising an illumination apparatus for illuminating a field of view, said field of view including the optical code.

6. (Original) The optical code reading system according to Claim 1, wherein said at least one wavelength component is selected from the group consisting of blue, green and red wavelength components.

7. (Previously Presented) The optical code reading system according to Claim 1, wherein said means for performing said analysis comprises means for performing the steps of:

determining a difference by subtracting a first wavelength component of said at least one wavelength component from a second wavelength component of said at least one wavelength component;

determining whether the difference necessitates movement of said at least one lens along said optical axis, wherein said amount of movement is determined if the difference necessitates movement of said at least one lens; and

determining a direction of movement of said at least one lens according to whether the difference is positive or negative, if said difference necessitates movement of said at least one lens.

8. (Previously Presented) The optical code reading system according to Claim 1, wherein said means for performing said analysis comprises means for performing the steps of:

determining a difference by subtracting said at least one value from a value stored within a memory, or by subtracting said stored value from said at least one value and taking an absolute value of said difference; and

determining whether the difference necessitates movement of said at least one lens along said optical axis, wherein said amount of movement is determined if the difference necessitates movement of said at least one lens.

9. (Previously Presented) A method for imaging and decoding an optical code, said method comprising the steps of:

imaging said optical code by an image sensor and generating at least one data signal representative of at least one parameter of at least one wavelength component of said optical code impinging onto said image sensor, wherein each of said at least one data signal represents a particular color;

performing an analysis utilizing principles of axial chromatic aberration and at least one value indicative of the parameter of the at least one wavelength component;

determining an amount of movement of at least one lens based on said analysis for adjusting a focus quality of an image corresponding to said optical code and impinged onto said image sensor, such that said amount of movement is determinative by data signals representing one or more colors;

moving said at least one lens by at least the determined amount for adjusting the focus quality of said image; and

decoding data encoded by said image.

10. (Original) The method according to Claim 9, further comprising the step of determining a distance to said optical target by accessing at least one data structure and correlating the at least one value indicative of the parameter of the at least one wavelength component to said distance.

11. (Original) The method according to Claim 9, further comprising the step of repeatedly generating the at least one data signal and performing said analysis, until said data is decodeable by said decoder.

12. (Original) The method according to Claim 9, wherein said at least one wavelength component is selected from the group consisting of blue, green and red wavelength components.

13. (Original) The method according to Claim 9, wherein said step of performing an analysis comprises the steps of:

determining a difference by subtracting a first wavelength component of said at least one wavelength component from a second wavelength component of said at least one wavelength component;

determining whether the difference necessitates movement of said at least one lens; and

determining a direction of movement of said at least one lens according to whether the difference is positive or negative, if said difference necessitates movement of said at least one lens.

14. (Original) The method according to Claim 9, wherein said step of performing an analysis comprises the steps of:

determining a difference by subtracting said at least one value from a value stored within a memory, or by subtracting said stored value from said at least one value and taking an absolute value of said difference; and

determining whether the difference necessitates movement of said at least one lens.

15. (Previously Presented) A system for adjusting a focus quality of an image impinging onto an image sensor, said system comprising:

means for generating at least one data signal representative of a parameter of at least one wavelength component of said image, wherein each of said at least one data signal represents a particular color;

means for performing an analysis utilizing principles of axial chromatic aberration and at least one value indicative of the parameter of the at least one wavelength component; and

an actuator for moving at least one lens in accordance with the analysis for adjusting the focus quality of said image, such that an amount of movement of said at least one lens is determinative by data signals representing one or more colors.

16. (Original) The system according to Claim 15, wherein said means for performing an analysis comprises means for determining a distance to an optical target corresponding to said image by accessing at least one data structure and correlating the at least one value indicative of the parameter of the at least one wavelength component to said distance.

17. (Original) The system according to Claim 15, wherein said at least one wavelength component is selected from the group consisting of blue, green and red wavelength components.

18. (Original) The system according to Claim 15, wherein said means for performing an analysis comprises:

means for determining a difference by subtracting a first wavelength component of said at least one wavelength component from a second wavelength component of said at least one wavelength component;

means for determining whether the difference necessitates movement of said at least one lens; and

means for determining a direction of movement of said at least one lens according to whether the difference is positive or negative, if said means for determining whether the difference necessitates movement of said at least one lens determines movement is necessitated.

19. (Original) The system according to Claim 15, wherein said means for performing an analysis comprises:

means for determining a difference by subtracting said at least one value from a value stored within a memory, or by subtracting said stored value from said at least one value and taking an absolute value of said difference; and

means for determining whether the difference necessitates movement of said at least one lens.

20. (Previously Presented) A method for adjusting a focus quality of an image impinging onto an image sensor, said method comprising the steps of:

generating at least one data signal representative of a parameter of at least one wavelength component of said image, wherein each of said at least one data signal represents a particular color;

performing an analysis utilizing principles of axial chromatic aberration and at least one value indicative of the parameter of the at least one wavelength component; and

moving at least one lens in accordance with the analysis for adjusting the focus quality of said image, such that an amount of movement of said at least one lens is determinative by data signals representing one or more colors.

21. (Original) The method according to Claim 20, wherein said step of performing an analysis comprises the step of determining a distance to an optical target corresponding to said image by accessing at least one data structure and correlating the at least one value indicative of the parameter of the at least one wavelength component to said distance.

22. (Original) The method according to Claim 20, wherein said at least one wavelength component is selected from the group consisting of blue, green and red wavelength components.

23. (Original) The method according to Claim 20, wherein said step of performing an analysis comprises the steps of:

determining a difference by subtracting a first wavelength component of said at least one wavelength component from a second wavelength component of said at least one wavelength component;

determining whether the difference necessitates movement of said at least one lens; and

determining a direction of movement of said at least one lens according to whether the difference is positive or negative, if said step of determining whether the difference necessitates movement of said at least one lens determines movement is necessitated.

24. (Original) The method according to Claim 20, wherein said step of performing an analysis comprises the steps of:

determining a difference by subtracting said at least one value from a value stored within a memory, or by subtracting said stored value from said at least one value and taking an absolute value of said difference; and

determining whether the difference necessitates movement of said at least one lens.

25. (Original) A method for determining a focus discriminator for a focusing system, said method comprising the steps of:

generating a first data signal representative of a parameter of a first wavelength component of an image impinged onto an image sensor of said focusing system;

generating a second data signal representative of a parameter of a second wavelength component of said image; and

subtracting a value indicative of the parameter of the first wavelength component from a value indicative of the parameter of the second wavelength component to obtain a difference, wherein said difference is a focus discriminator indicating whether said image requires focusing by said focusing system.

26. (Original) The method according to Claim 25, wherein said method utilizes principles of axial chromatic aberration, wherein a first wavelength having said first wavelength component has an optimum focus at a first focus plane and a second wavelength having said second wavelength component has an optimum focus at a second focus plane, and wherein said first and second focus planes are different due to axial chromatic aberration.

27. (Original) A method for determining a focus discriminator for a focusing system, said method comprising the steps of:

generating a data signal representative of a parameter of a wavelength component of an image impinged onto an image sensor of said focusing system; and

subtracting a value indicative of the parameter of the first wavelength component from a stored value, or subtracting the stored value from the value indicative of the parameter of the first wavelength component to obtain a difference, wherein said difference is a focus discriminator indicating whether said image requires focusing by said focusing system.

28. (Original) The method according to Claim 27, wherein said method utilizes principles of axial chromatic aberration, wherein a wavelength having said wavelength component has an optimum focus at a first focus plane and another wavelength having a second

wavelength component has an optimum focus at a second focus plane, and wherein said first and second focus planes are different due to axial chromatic aberration.